

Mr. Tomlinson's death took place under exceptionally lamentable circumstances. On the morning of January 21, 1886, he went out with a double-barrelled gun, intending to shoot gulls. He was accompanied by his eldest son, aged eleven, and in climbing up a hill in the Wakapuaka Road, he slipped, when the gun exploded and the shot from the charge went through his heart. He has left to mourn his loss a widow and a family of five children.

He was elected a Fellow of the Society April 9, 1873.

Professor THEODOR VON OPPOLZER, the only son of the celebrated physician Dr. Johann von Oppolzer, was born at Prague, October 26, 1841. His early years were spent at Leipzig, whence, while yet in his childhood, he moved to Vienna, as his father had been appointed professor at the university of that city. Here he studied physics, but his abilities and great predilection for mathematics induced him to devote all his spare time to the study of natural philosophy. In these studies he was aided by Dr. E. Weiss, the present Director of the Vienna Observatory, who soon recognised his eminent talents for Astronomy, and encouraged him to devote his life to that science. Oppolzer, who was possessed of independent means, sufficient to remove all necessity for seeking immediate employment, therefore constructed a well-appointed observatory after he had taken the degree of a Doctor of Physics. At this observatory he observed asteroids and comets during the years 1862 to 1872 with great zeal, and his computations of the orbits of such bodies were the first papers by which he introduced himself to the astronomical world. For such work he was especially qualified by the quickness and certainty with which he conducted extended numerical computations. He published numerous papers on this subject.

He also published all his valuable theoretical researches in this branch of Astronomy in an excellent "*Lehrbuch zur Bahnbestimmung der Kometen und Planeten*," of which the first volume appeared 1870; and in a second, totally revised and much enlarged edition, 1882. The second volume was published in 1880. In this classic work the author has in fact reconstructed on a more comprehensive plan the *Theoria Motus* of Gauss. The theories upon which the calculation of the orbits of comets and planets depend are discussed so fully and exhaustively, that the work forms, indeed, a Treatise on Astronomy, "not only useful to the practical Astronomer, but of the highest value to the Mathematician who desires to know the exact manner in which the dynamical formulæ he is acquainted with are actually applied in practice to the calculation of orbits." This most important work has been recently translated into French by Prof. Ernest Pasquier, of Louvain.

In the year 1873 Prof. Oppolzer was entrusted by the Austrian Government with the astronomical work for the *Europäische Gradmessung*. In this position, which he held till his death,

being in his last years chairman of the Austrian Commission of the *Europäische Gradmessung*, he showed an extraordinary ability as an organiser, and executed a long series of telegraphic longitude operations between various cities of Austria amongst each other, and with the capitals of other countries. For many weeks in the summer of 1876 operations were undertaken at the Royal Observatory, Greenwich, by Professor Oppolzer's assistants for the purpose of making the time observations and telegraphic observations necessary for determining the longitudes of Vienna and Berlin, connected also in some measure with Munich and Paris. All the observations for this very extensive work are finished, but unfortunately the reductions are not very far advanced. In connection with these investigations he also conducted a series of pendulum experiments for determining the intensity of gravity at Vienna, and he made a very interesting and important study of the vibrations of the stand of the pendulum and their influence on the time of its oscillation. But here also his very premature death prevented him from discussing more than a small part of these extremely delicate researches, for which he devised special methods of observation and reduction.

In the year 1881 Oppolzer published "*Syzygien-Tafeln für den Mond*," which were intended to supply a simple and convenient means of finding very approximately the time of New and Full Moon, particularly in the case of an ecliptic syzygy, and of calculating all the circumstances of an eclipse without the necessity of having recourse to the Solar and Lunar Tables.

But the most important work undertaken by Oppolzer is his "*Canon der Finsternisse*" [Table of eclipses], which will be found to be an invaluable basis for all historical researches connected with solar eclipses, and will form an enduring monument of the power of its author.

This masterly paper contains not only the elements of eclipses of the Sun, but also of those of the Moon from 1207 B.C. to 2162 A.D. The elements are given for all the eclipses partial and central occurring during this period of time.

The tables furnish the computations of 8,000 Solar Eclipses, of which about 2,220 are total, 355 annular and total, 2,605 annular, and 2,820 partial.

Of the Moon, 5,200 eclipses are computed; for which the tables give not only the date, but also the magnitude, the time of the middle of the eclipse, and the geographical position of the point on the earth where the Moon at that moment is at the zenith.

Appended to the work are 160 charts, in which is laid down the central line of all Solar Eclipses visible in the northern hemisphere, and as far as 30° south latitude. Partial eclipses of the Sun, and those which are central only in regions more south than 30° are not mapped.

The work forms vol. lii. of the *Memoirs of the Imperial Academy of Sciences* at Vienna.

This noble undertaking Oppolzer was only just able to bring to a conclusion, for it was but a few hours before his death that he read the last proof-sheets of it.

Besides all this, Oppolzer was engaged during the last years of his life in researches on planetary disturbances, especially on the theory of the motion of the Moon, on astronomical refractions, and on the resisting medium, &c.

From this brief record of his more important researches it will readily be understood that his life was one of constant work, and that he was enabled to perform all he did only by an indefatigable diligence, a very remarkable power of memory, quickness of perception, and intuitive grasp of whatever he studied.

Von Oppolzer was appointed in 1876 Professor of Astronomy at the University of Vienna, and received besides this, various other distinctions from the Austrian Government and several foreign sovereigns. He was also Member of the Imperial Academy of Sciences at Vienna, Honorary Member of the Royal Academy at Munich, Correspondent of the Institute of France, and Fellow of many other scientific bodies. He was elected an Associate of the Royal Astronomical Society on Jan. 9, 1874.

In the middle of November 1886 Oppolzer returned to Vienna somewhat ill, after attending the Paris International Conference on Weights and Measures, and the meeting of the Permanent Commission of the *Europäische Gradmessung* at Berlin. No one would have considered, however, from his appearance, that his end was so near. At first his illness was thought to be a kind of malaria, but it very soon proved a serious disease of the heart, of which he suddenly died, on the morning of December 26, at the early age of 45 years.

E. W.